

IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R.
§1.121.

1. (currently amended) A phantom for use with an imaging device,
comprising:

a first portion including at least one group of vessel-like regions having a
radiographically opaque quality, wherein the at least one group of vessel-like regions
includes at least first and second vessel-like regions such that the first vessel-like region is
larger than the second vessel-like region; and

a second portion coupled to the first portion and rotatable with respect to the first
portion, the second portion having a testing region of material radiographically similar to
human tissue;

wherein the phantom comprises a plurality of groups of vessel-like regions, wherein
a first group of vessel-like regions comprises a first concentration of a radiographically
opaque material and a second group of vessel-like regions comprises a second concentration
of a radiographically opaque material.

2. (canceled)

3. (original) The phantom as recited in claim 1, wherein the phantom is
manually portable.

4. (original) The phantom as recited in claim 1, wherein the testing region
includes a first material radiographically similar to a first kind of human tissue and a second
material radiographically similar to a second kind of human tissue.

5. (original) The phantom as recited in claim 4, wherein the first and second materials are located adjacent to one another.

6. (original) The phantom as recited in claim 1, wherein the radiographically opaque quality is a radio-opacity equivalent to iodine.

7. (original) The phantom as recited in claim 1, wherein the radiographically opaque quality is a radio-opacity equivalent to barium.

8. (original) The phantom as recited in claim 1, comprising an arm for rotating the first portion with respect to the second portion.

9. (previously presented) A phantom for use with an imaging device, comprising:

a first portion having at least one group of vessel-like regions extending from a first portion central region and towards a periphery of the first portion, wherein the at least one group of vessel-like regions has a level of a radiographically opaque quality; and

a second portion coupleable to the first portion and having a first testing region and a second testing region arranged circumferentially with respect to one another, wherein the first testing region includes a first attenuation material radiographically similar to a first type of human tissue and the second testing region includes a second attenuation material radiographically similar to a second type of human tissue, the first testing region being configured to attenuate X-ray radiation more than the second testing region.

10. (canceled)

11. (canceled)

12. (previously presented) The phantom as recited in claim 9, wherein the first testing region is located towards the periphery of the first portion and the second portion is located towards the first portion central region.

13. (original) The phantom as recited in claim 9, comprising a calibrating region.

14. (original) The phantom as recited in claim 9, wherein the calibrating region includes at least one of copper and water.

15. (original) The phantom as recited in claim 9, wherein the first and second portions are couplable to one another such that the at least one group of vessel-like regions overlaps the plurality of testing regions.

16. (currently amended) A phantom for use with an imaging device, comprising:

a first portion having at least first and second vessel-like regions each having a radiographically opaque quality, wherein the first vessel like region is larger than the second vessel like region; and

a second portion coupled to the first portion and rotatable with respect to the first portion and including a first material radiographically similar to a first kind of human tissue located adjacent to a second material radiographically similar to a second kind of human tissue;

wherein the phantom comprises a plurality of groups of vessel-like regions, wherein a first group of vessel-like regions comprises a first concentration of a radiographically opaque material and a second group of vessel-like regions comprises a second concentration of a radiographically opaque material.

17. (original) The phantom as recited in claim 16, wherein the first kind of human tissue is bone tissue.

18. (original) The phantom as recited in claim 16, wherein the first kind of human tissue has a density greater than the second kind of human tissue.

19. (original) The phantom as recited in claim 16, wherein the first and second materials comprise an epoxy.

20. (previously presented) A method for testing an imaging device, comprising:

producing a first radiographic image of a phantom comprising a first portion and a second portion rotatable with respect to the first portion and having a plurality of vessel-like regions having a radiographically opaque quality extending radially from a central region of the phantom and a testing region including a first material radiographically similar to a first kind of human tissue a second material radiographically similar to a second kind of human tissue, wherein the phantom is in a first configuration for producing the first radiographic image; and

producing a second radiographic image of the phantom in a second configuration, wherein the vessel-like regions in the second configuration are repositioned with respect to the position of the vessel-like regions in the first configuration by rotation of the first portion of the phantom with respect to the second portion of the phantom; and

producing a test image by subtracting the first image from the second image.

21. (original) The method as recited in claim 20, wherein producing comprises producing a digital X-ray image.

22. (original) The method as recited in claim 20, comprising stabilizing the imaging device via a calibration region located in the phantom.

23. (previously presented) A system for testing an imaging device, comprising:
means for producing a first radiographic image of a phantom comprising a first portion and a second portion rotatable with respect to the first portion and having a plurality of vessel-like regions having a radiographically opaque quality extending radially from a central region of the phantom and a testing region including a first material radiographically similar to a first kind of human tissue a second material radiographically similar to a second kind of human tissue, wherein the phantom is in a first configuration for producing the first radiographic image; and

means for producing a second radiographic image of the phantom in a second configuration, wherein the vessel-like regions in the second configuration are repositioned with respect to the position of the vessels in the first configuration by rotation of the first portion of the phantom with respect to the second portion of the phantom; and

means for producing a test image by subtracting the first image from the second image.

24. (canceled)

25. (original) A method for testing an imaging device, comprising:
providing a subtracted image of a phantom having a plurality of testing regions each region being configured to attenuate X-ray radiation at varying degrees arranged circumferentially with respect to one another and at least one group of vessel-like regions having a radiologically opaque quality overlappingly arranged with respect to the circumferentially arranged testing regions; and

analyzing the subtracted image to determine the smallest vessel-like region of the vessel group of vessel-like regions visible in the test region having the highest degree of attenuation to determine an upper limit of the imaging device.

26. (previously presented) The method as recited in claim 25, comprising:
analyzing the subtracted image to determine the smallest vessel-like region of the group of
vessel-like regions visible in the test region having the lowest degree of attenuation to
determine a lower limit of the imaging device.

27. (previously presented) The method as recited in claim 26, comprising
developing a performance standard for the imaging device based on the upper and lower
limits of the imaging device.

28. (original) The method as recited in claim 27, comprising calibrating the
imaging device based upon the performance standard and a pre-determined ideal
performance standard.

29. (original) A testing system for an imaging device, comprising:
means for providing a subtracted image of a phantom having a plurality of testing
regions each region being configured to attenuate X-ray radiation at varying degrees
arranged circumferentially with respect to one another and at least one group of vessel-like
regions having a radiologically opaque quality overlappingly arranged with respect to the
circumferentially arranged testing regions; and

means for analyzing the subtracted image to determine the smallest vessel-like
region of the group of vessel-like regions visible in the test region having the highest degree
of attenuation to determine an upper limit of the imaging device.

30. (canceled)